ORIGINAL ARTICLE

TREND OF IRRATIONAL MEDICATION AMONG THE STUDENTS OF DEPARTMENT OF PHARMACY ABBOTTABAD UNIVERSITY OF SCIENCE AND TECHNOLOGY IN COMMON COLD AND FLU

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Background: Common cold and flu are mostly of viral pathogenesis with symptoms in upper respiratory tract. It is highly contagious and close inter-individual contact in winter season increase the spread spectrum. Mis-interpretation with bacterial cause leads to irrationality in its medication. **Methods:** A cross-sectional study was conducted among pharmacy department students in February-March 2016. Data were collected through self-administered questionnaire and expressed as percentage frequency. **Results:** Total 180 students were provided with questionnaire to fill the desired data. 66 out of them were reported as patients of common cold and flu. Trend of medication after compilation and analyzing data reveal that: 60.60% (n=40/66) students got irrational medication, 4.54% (n=3/66) students presents with other disease, so were declared of complex nature and 9.1% (n=6/66) patients, presented only with symptoms were counseled accordingly to the standard therapy by Health Protection Agency-UK (Management of infection guidance for primary care for consultation and local adaptation, 2013), and Columbia University Medical Center (Guidelines for the empiric use of antibiotics in adult patients – Feb, 2005) and all of them were followed for their entire therapy time. All of the counseled patients recovered successfully. Total 25.76% (n=17/66) other than that of counseled group students also got rational medication. **Conclusion:** Use of medicine by students in study was found irrational. National and international awareness programs about such viral disease should be designed and arranged to promote information in the community and limit the irrational medication. It also need an active health regulatory authority in undeveloped and less developed countries specially to limit the availability of prescription drugs without physician advise through availability of qualified person in pharmacies.
Keywords: Rational medication; Common cold; Flu; Self-medication

INTRODUCTION

Globally, half of all medicines used are irrational because of inappropriate prescription, dispensing or selling.[1,2] World Health Organization (WHO) defines rational prescription as "patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community".[3] Irrational use of medicines refers to use of drugs without following these said criteria.

With a step-up condition from the global data, irrational drug use is serious problem in Pakistan causing a huge pharmacoeconomic burden with risk of resistance in case of antibiotics and lake of available data. It needs to be a primary target of our national essential medicine regulatory program. We identified the following common types of irrational medicine use: drug use without indicators, inappropriate drug, inappropriate dosage or usage, and inappropriate drug combinations.[4]

Most people around the world will have one or more common cold episodes every year.[5] Viruses-the most probable causative agent of common cold and flu varies in their incubation period but rhinovirus which causes at least 50% of all upper respiratory tract of viral infections, have its incubation length of 2 days.[6,7] It is highly contagious viral disease both in children and adults. The disease spread more often in the winter months because people spend most of their time in close contact with each other.[8] Larynx, pharynx, sinuses and nose are sites for acute self-limiting viral infection in common cold with symptoms of sore throat, rhinitis, rhinorrhea, cough, malaise, where accompanied by pyrexia and headache in case of flue.[9,10]

With occasional persistence of symptoms for three weeks, normally peak symptoms appear in 1–3 days and last for 7–10 days.[9,11] Antibiotics are not first line therapy and ineffective in the

treatment of either common cold, acute purulent rhinitis or flu due to afore-discussed reasons for cause, and should not be prescribed unless there is convincing evidence of a secondary bacterial infection.[5,10,12]

MATERIAL AND METHODS

A cross-sectional study was conducted among Pharmacy Department students in February-March 2016. All these students were divided into 4 groups; a) Students who got self-medication, b) Students visited to Physician, c) Students counseled according to international standard and d) Students with complicated nature and concurrent infections.

Patients' medication(s) were compared with standart formulary provided by "Health Protection Agency-UK (Management of infection guidance for primary care for consultation and local adaptation, 2013)", and "Columbia University Medical Center (Guidelines for the empiric use of antibiotics in adult patients – Feb, 2005)". Data were collected through self-administered questionnaire and expressed as percentage frequency. Microsoft Excel Professional Plus 2010 was used for data analysis and graph designing.
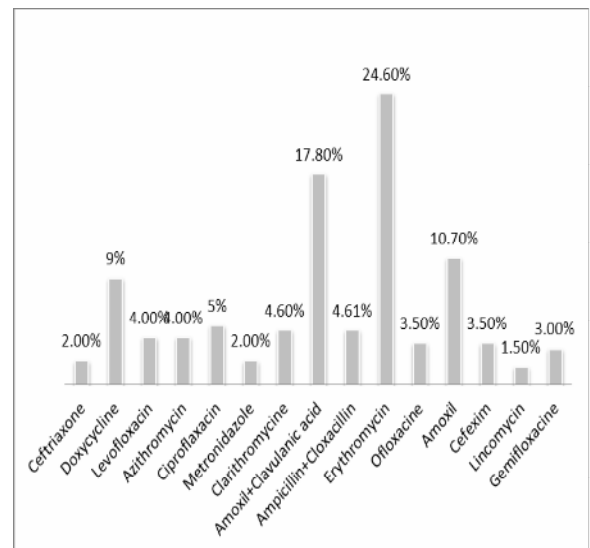
RESULTS

Total 180 students of mean age 22.0±3 at Department of Pharmacy, Abbottabad University of Science and Technology Abbottabad were provided questionnaire to fill the desired data. Including in them 66 individuals was reported as patients of common cold and flu. Trend of medication after compilation and analyzing data revealed that: 60.60% (n=40/66) students got irrational medication. Out of all 66 patient students, 54.54% (n=36/66) got self-medication based on their past experience. The selection of medicines by 37.88% (n=25/66) among self-medication gone-through students were irrational and only 16.7% (n=11/66) luckily got rational therapy in this group.

Similarly, 31.81% (n=21/66) patients visited physician for their check-up where 22.72% (n=15) of them were prescribed with irrational medication and only 9.1% (n=6/66) were being treated rationally as compared to the standard. In the same group 4.545% (n=3/66) patients were of complex nature and 9.1% (n=6/66) patients were counseled accordingly to the standard therapy by Health Protection Agency-UK (Management of infection guidance for primary care for consultation and local adaptation –2013), and-Columbia University Medical Center (Guidelines for the empiric use of antibiotics in adult patients –Feb, 2005) and all of them were followed for their entire therapy time, where they recovered successfully.

All summarize data of medication are shown in table-1and figure-1.

Table-1: Students' medication data

Total No. of Students asked to fill questionnaire	No. of Students suffering of sore throat	No. of Students who got self-medication		No. of Students visited to Physician		No. of Counseled Students according to international standard given by HPA UK	No. of students with complicated nature and concurrent infections
180	66	36		21		9.1% (n=6)	5.545% (n=3)
		Rational Medication (As compared to Standard)	Irrational Medication	Rational Medication	Irrational Medication		
		16.67% (n=11)	37.88% (n=25)	9.1% (n=6)	22.727% (n=15)		

Figure-1: Use of different anibiotics by all students

DISCUSSION

The study was conducted to assess the trend of irrational drug use in pharmacy students-field related people having background knowledge of drugs. Results of present study can be strengthened in focusing the same area of study. Unforutnatley in Pakistan and most of other such developing countires lack any data about such conditions. For the said reason, we don't know clear picture of resistance patern and economical burden. It is of great importance to focus on such seasonal and epidemic diseases by collecting data of the same patern with wide epidemic regions and interpret clear situation of antimicrobial and other medication as well as species resistance pattern and pharmacoeconomic burden.

Some how our present study can be picturised for assessment by comparing with already existing data from a few developed and under-deveoped countries. A statement of Kenealy and Arroll that "There is no evidence of benefit from antibiotics for the common cold or for persisting acute purulent rhinitis in children or adults" [5] support and provide a backbone for the findings and necessity of our present study. Similarly data of irrational antibiotics prescribing for cough (68.9%) in Northern Tanzania, a study conducted by Gwimile and his coleagues almost correlate to that of our results (60.60)%.[13] Results of use of Penicillin, Co-Amoxiclav and Amoxicillin (40 %) in study by Hashemi et al, which also being used by most of the patients in our study show a step-up in utilization from that of our results (33%).[14] Patients chose to go for self-medication in our study (54.55%), is much more higher in comparison to 36.1% reported by Buke *et al*, a study conducted on Students of Ege University through questionnaire for common cold.[15] These studies especially regarding self-medication and mis-interpretation of disease intense the topic of irrational use to focus more for further study and wide the spectrum of awareness to the community level with more simple and technical information for disadvantages of such irrational use and future resistance consequences.

CONCLUSION

Use of medicine by students in study was found irrational due to easy availability and lake of information. National awareness programs about such viral and other seasonal disease are needed to arrange which will further promote information in the community to limit the irrational medication and pharmacoeconomic burden. It also need an active and effective health regulatory authority frame work to limit the availability of prescription drugs without physician advise through presence of qualified person in practicing premesis and pharmacies.

REFERENCES

1. Shankar PR. Medicines use in primary care in developing and transitional countries: fact book summarizing results from studies reported between 1990 and 2006. Bull World Health Organ 2009;87(10):804.
2. WHO. Promoting rational use of medicines: core components. 2002.
3. The rational use of drugs. World Health Assembly Resolution WHA39.27. Geneva, World Health Organization, 1985.
4. Zhang WY, Li YR, Li YJ, Li XO, Zhao WG, Lu RZ. A cross-sectional analysis of prescription and stakeholder surveys following essential medicine reform in Guangdong Province, China. BMC Health Serv Res 2015;15(1):98.
5. Kenealy T, Arroll B. Antibiotics for the common cold, an infection of the upper respiratory tract | Cochrane [Internet]. [cited 2016 Nov 24]. Available from: /CD000247/ARI_antibiotics-for-the-common-cold-an-infection-of-the-upper-respiratory-tract
6. Lessler J, Reich NG, Brookmeyer R, Perl TM, Nelson KE, Cummings DA. Incubation periods of acute respiratory viral infections: a systematic review. Lancet Infect Dis 2009;9(5):291–300.
7. Brown AC. Gargle method to reduce the duration of common cold symptoms. Google Patents 2015.
8. Lambert L. Is it flu or allergy?: review. SA Pharm J 2014;81(4):20–4.
9. Allan GM, Arroll B. Prevention and treatment of the common cold: making sense of the evidence. CMAJ 2014;186(3):190–9.
10. Coetzer R. Colds and flu medication in the elderly: review. SA Pharm J 2012;79(5):35–7.
11. Leder K, Sinclair MI, Mitakakis TZ, Hellard ME, Forbes A. A community-based study of respiratory episodes in Melbourne, Australia. Aust N Z J Public Health 2003;27(4):399–404.
12. Sexton D, McClain M. The common cold in adults: diagnosis and clinical features. UpTo-Date Homepage Internet. 2011.
13. Gwimile JJ, Shekalaghe SA, Kapanda GN, Kisanga ER. Antibiotic prescribing practice in management of cough and/or diarrhoea in Moshi Municipality, Northern Tanzania: cross-sectional descriptive study. Pan Afr Med J 2012;12:103.
14. Hashemi S, Nasrollah A, Rajabi M. Irrational antibiotic prescribing: a local issue or global concern? EXCLI J 2013;12:384–95.
15. Buke C, Hosgor-Limoncu M, Ermertcan S, Ciceklioglu M, Tuncel M, Köse T, *et al*. Irrational use of antibiotics among university students. J Infect 2005;51(2):135–9.

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